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MAR 14 2007

DATE: March 14, 2007

PTO IDENTIFIER: Application Number 09/684,122-Conf. #3208  
Patent Number 6,965,696

Inventor: Mitsuru Tokuyama et al.

MESSAGE TO: US Patent and Trademark Office

FAX NUMBER: (571) 273-8300

FROM: EDWARDS ANGELL PALMER & DODGE LLP  
David G. Conlin

PHONE: (617) 439-4444

Attorney Dkt. #: 55288(70904)

PAGES (Including Cover Sheet): 12

CONTENTS: Fax Transmission (1 page)  
Certificate of Transmission (1 page)  
Status Inquiry for U.S. Patent No. 6,965,696 (2 pages)  
Transmittal form  
Copy of Request For Certificate of Correction Pursuant to 37 CFR 1.322 filed 2/24/2006; copy of front page of US Patent No. 6,965,696, copy of PTO/S8/08/a.h and copy of Fax.  
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Certificate  
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PTO/SB/17 (09-04)  
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Application No. (if known): 09/684,122

Attorney Docket No.: 55288(70004)

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Status Inquiry for application 09/684,122 (1 page)

Fax Transmission (1 page)

Transmittal form

Copy of Request For Certificate of Correction Pursuant to 37 CFR 1.322

filed 2/4/2006; copy of front page of US Patent No. 6,965,696, copy of

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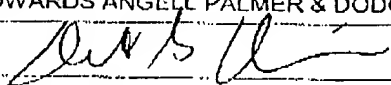
<b>TRANSMITTAL FORM</b>  <i>(To be used for all correspondence after initial filing)</i>	Application Number	Patent#: 6,965,696
	Filing Date	Issued: November 15, 2005
	First Named Inventor	Mitsuru Tokuyama
	Art Unit	2624
	Examiner Name	P. L. Edwards
	Attorney Docket Number	55288(70904)
Total Number of Pages in This Submission		

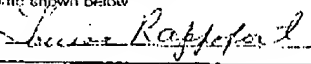
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Remarks: Copy of Request for Cert. Of Correction dated 2/24/06, copy of First page of US 6,965,696, a copy of PTO/Sb/08a/b showing 2 references not included on first page of patent, and copies of fax transmission papers dated 2/27/2006.		

## SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	EDWARDS ANGELL PALMER & DODGE LLP		
Signature			
Printed name	David G. Conlin		
Date	March 13, 2007	Reg. No.	27,026

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Date: 3/14/2007	Signature:  (Louise Ruppaport)

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**CENTRAL FAX CENTER****MAR 14 2007**Docket No.: 55288(70904)  
(PATENT)

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Dated: 3/14/2007

Signature: *Louise Rappaport*

(Louise Rappaport)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:  
Mitsuru Tokuyama et al.

Application No.: 09/684,122

Confirmation No.: 3208

Filed: October 6, 2000

Art Unit: 2624

For: IMAGE PROCESSING DEVICE

Examiner: P. L. Edwards

**STATUS INQUIRY**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

It is respectfully requested that the attorney named below be advised of the status of the above-identified patent.

U.S. Patent No. 6,965,696 issued on November 15, 2005. Upon review of the title page of the patent it was noted the Patent Office had omitted the following two cited references from the References Cited section (56):

JP 10-098627 4/1998

JP 11-213152 8/1999

The references had been considered by Examiner Edwards during prosecution as evidenced by the enclosed initialed copy of Form PTO/SB/08a/b.

Application No.: 09/684,122

2

Docket No.: 55288(70904)

A Request For a Certificate of Correction Pursuant to 37 CFR 1.322 was forwarded to the Certificate of Correction Branch on February 27, 2006 (copy of documents enclosed) to which we have received no reply.

Dated: March 13, 2007

Respectfully submitted,

By 

David G. Conlin

Registration No.: 27,026

EDWARDS ANGELL PALMER & DODGE  
LLP

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Boston, Massachusetts 02205

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Attorneys/Agents For Applicant

**FAX TRANSMISSION**

DATE: February 24, 2006

PTO IDENTIFIER: Application Number 09/684,122-Conf. #3208  
Patent Number 6,965,696

Inventor: Mitsuru Tokuyama, et al.

MESSAGE TO: Certificate of Corrections Branch

FAX NUMBER: (703) 308-6672

FROM: EDWARDS ANGELL PALMER & DODGE LLP  
David G. Conlin

PHONE: (617) 439-4444

Attorney Dkt. #: 55288 (70904)

PAGES (Including Cover Sheet): 7

CONTENTS: Certificate of Correction (1 page);  
Request for Certificate of Correction (No Fee) (2 pages);  
Copy of first page of U.S. Patent No. 6,965,696 (1 page);  
Copy of Initialed Form PTO/SU/08. (1 page); and a  
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Application No. (if known): 09/684,122  
Attorney Docket No.: 55288 (70904)

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Request for Certificate of Correction (No Fee) (2 pages);  
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MAR 14 2007

Docket No.: 55288 (70904)  
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Letters Patent of:  
Mitsuru Tokuyama, et al.

Patent No.: 6,965,696

Issued: November 15, 2005

For: IMAGE PROCESSING DEVICE

REQUEST FOR CERTIFICATE OF CORRECTION  
PURSUANT TO 37 CFR 1.322

Attention: Certificate of Correction Branch  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

Upon reviewing the above-identified patent, Patentee noted typographical errors which should be corrected.

On the title page of the patent, a copy of which is provided as an attachment hereto, the Patent Office has omitted cited references in the Reference Cited section (56). Please add the following cited references in the Foreign Patent Documents:

JP 10-098627 4/1998

JP 11-213152 8/1999

The patent was considered by Examiner Edwards during prosecution of the application as evidenced by the enclosed copy of Form PTO/SB/08 which has been duly initiated by Examiner Edwards.

The errors were not in the application as filed by applicant; accordingly no fee is required.

2735-07



Patent No.: 6,965,696

2

Docket No.: 55288 (70904)

Transmitted herewith is a proposed Certificate of Correction effecting such amendment. Patentee respectfully solicits the granting of the requested Certificate of Correction.

Dated: February 24, 2006

Respectfully submitted,

By 

David G. Conlin

Registration No.: 27,026

EDWARDS ANGELL PALMER & DODGE  
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Attorneys/Agents For Applicant

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(Also Form PTO 1050)

**UNITED STATES PATENT AND TRADEMARK OFFICE  
CERTIFICATE OF CORRECTION**

Page 1 of 1

PATENT NO. : 6,965,696  
APPLICATION NO. : 09/684,122  
ISSUE DATE : November 15, 2005  
INVENTOR(S) : Mitsuru Tokuyama, et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On the title page of the patent, Column 2, Item (56), please add the following cited references in the Foreign Patent Documents section:

JP	10/098627	4/1998
JP	11-213152	8/1999

MAILING ADDRESS OF SENDER (Please do not use customer number below):

David G. Conlin  
EDWARDS ANGELL PALMER & DODGE LLP 1  
P.O. Box 55874  
Boston, Massachusetts 02205

5010.10



US006965696B1

(12) **United States Patent**  
Tokuyama et al.

(10) Patent No.: **US 6,965,696 B1**  
(45) Date of Patent: **Nov. 15, 2005**

(54) **IMAGE PROCESSING DEVICE FOR IMAGE  
REGION DISCRIMINATION**

(75) Inventors: Mitsuru Tokuyama, Soraku-gun (JP);  
Masatsugu Nakamura, Kashiba (JP);  
Mihoko Tanimura, Nara (JP); Masaki  
Ohtsuki, Yamatokoriyama (JP);  
Norihide Yanoaka, Yamatokoriyama  
(JP)

(73) Assignee: Sharp Kabushiki Kaisha, Osaka (JP)

(\*) Notice: Subject to any disclaimer, the term of this  
patent is extended or adjusted under 35  
U.S.C. 154(b) by 871 days.

(21) Appl. No.: 09/684,122

(22) Filed: Oct. 6, 2000

(30) Foreign Application Priority Data

Oct. 14, 1999 (JP) ..... 11-291947

(51) Int. Cl.<sup>7</sup> ..... G06T 7/40

(52) U.S. Cl. .... 382/224; 382/226; 382/227;  
382/273; 382/276; 382/180; 382/205; 358/2.1;  
358/3.22; 358/462; 358/466; 358/418

(58) Field of Search ..... 382/173, 176,  
382/180, 227, 182-226; 358/2.1, 3.22, 448,  
462, 466

(56) References Cited

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5,679,492 A \* 8/1997 Fujita et al. .... 358/2.1  
5,892,592 A \* 4/1999 Adachi et al. .... 358/462  
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EP 0 902 885 A2 3/1999  
JP 5-50187 7/1993  
JP 10-271336 4/1998  
JP 11-027517 1/1999  
JP 11-069150 3/1999  
JP 11-066372 4/1999

OTHER PUBLICATIONS

Office Action for corresponding application number  
11-291947 from Japan Patent Office mailed Aug. 26, 2001  
(4 pp.) and English translation thereof (8 pp).

\* cited by examiner

Primary Examiner—Leo Houdreau

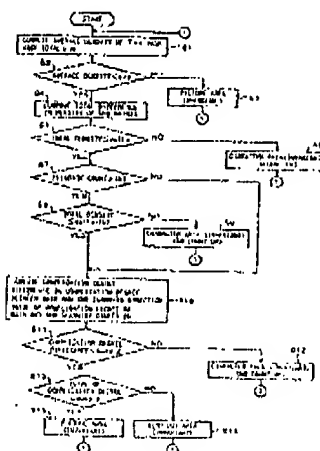
Assistant Examiner—Patrick Edwards

(74) Attorney, Agent, or Firm—Edwards & Angeli, LLP;  
David G. Conlin; George W. Hartnell, III

(57) ABSTRACT

An image processing device of the present invention is provided with four kinds of sub masks in total including two kinds in a main scanning direction and two kinds in a sub scanning direction, in a main mask constituted by a plurality of pixels including a target pixel. In the image display device, when determining a target pixel of an inputted image data, a difference in a total density of the two kinds of sub masks in a main scanning direction is added to a normalized difference in total density of the two kinds of sub masks in a sub scanning direction, and a resultant value is compared with a threshold value so as to determine if the target pixel is an edge area or not.

18 Claims, 9 Drawing Sheets





Substitute for form 1449/AB/PTO

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known

Application Number 09/584,122

Filing Date October 6, 2000

First Named Inventor Mitsuru Tokuyama

Art Unit 2621

Examiner Name P.L. Edwards

Attorney Docket Number 55288 (70904)

## U.S. PATENT DOCUMENTS

Examiner Initials <sup>1</sup>	Cite No. <sup>2</sup>	Document Number Number Kind Code <sup>3</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
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## FOREIGN PATENT DOCUMENTS

Examiner Initials <sup>1</sup>	Cite No. <sup>2</sup>	Foreign Patent Document Country Code <sup>3</sup> , Number <sup>4</sup> Kind Code <sup>5</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
PL	BB	JP-10-098627	04-14-1998	Matsushita Electric Ind. Co., Ltd.		A
PL	BC	JP-10-271326	10-09-1998	Sharp Corp.		A
PL	BD	JP-11-027517	01-29-1999	Sharp Corp.		A
PL	DE	JP-11-069150	03-09-1999	Toshiba Corp.		A
PL	DF	JP-11-096372	04-09-1999	Omron Corp.		A
PL	BG	JP-11-213152	08-06-1999	Toshiba Corp.		A
PL	BH	JP-5-50187	07-28-1993	Unknown		A

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PL	CA	Office Action for corresponding application number 11-291947 from Japan Patent Office mailed 26 August 2004 (4 pp.) and English translation thereof (8 pp.)	

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Examiner Signature *[Signature]* Date Considered 11-07-2004